

Thomson's e/m experiment

Run #1	Your measurements			Calculated quantities		
			Units			Units
Determining the radius (R) of the track	x y		metres metres	$R = (x^2 + y^2)/2y$		metres
Determining the magnetic field (B)	I		amps	$B = 4.23 \times 10^{-3}I$		Tesla
Determining the electric field (E)	V		volts	$E = V/0.052$		volts/metre
Determining the electron's velocity (v)				$v = E/B$		metres/sec
Determining e/m				$e/m = v/BR$		Coulombs/kg

Run #2	Your measurements			Calculated quantities		
			Units			Units
Determining the radius (R) of the track	x y		metres metres	$R = (x^2 + y^2)/2y$		metres
Determining the magnetic field (B)	I		amps	$B = 4.23 \times 10^{-3}I$		Tesla
Determining the electric field (E)	V		volts	$E = V/0.052$		volts/metre
Determining the electron's velocity (v)				$v = E/B$		metres/sec
Determining e/m				$e/m = v/BR$		Coulombs/kg